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EXAMINER

SOBUTKA, PHILIP

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/607,868

Applicant(s)

ZAFAR ET AL.

Examiner

Philip J. Sobutka

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/03, 12/04.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objection – Duplicate Claims***

1. Applicant is advised that should claims 13 and 15-17 be found allowable, claims 19 and 20-22, respectively, will be objected to under 37 CFR 1.75 as being substantial duplicates thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 26 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 26 and 27 recites the limitation "the obstruction" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Note that it is believed that there is a typo in claim dependency since claim 24 provides antecedent basis for the term "the obstruction". Therefore the claim rejections below have treated the claims as if they depended from claim 24, not claim 25.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

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obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 23 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim.

6. Claim 2 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim SDARS, claim 3 requires the satellite antenna to be quadrafilair helix. It would have been obvious to one of ordinary skill in the art that arrangement would not require a specific satellite antenna. Therefore it would have

been obvious to one of ordinary skill in the art to modify claim 3 as shown in the instant claim in order to provide greater options for assembly components. Note that the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

7. Claim 3 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim quadrafilair helix antennas, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

8. Claim 4 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claim requires the antenna to be a patch antenna. Official Notice is

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taken that patch antennas are well known in the art. It would have been obvious to one of ordinary skill in the art to modify claim 23 to use a patch antenna in order to utilize a very low profile antenna. Claim 23 also requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim. The instant claim also requires the satellite signal to be SDARS. Official Notice is taken that satellite audio is very popular. Therefore it would have been obvious to one of ordinary skill to modify claim 24 to receive SDARS signals in order to allow users to receive this popular band.

9. Claims 5 and 6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while the quadrafilar helix antennas is a coupled loop antenna, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

10. Claim 7 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other

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because, while they both claim the 20-degree angle over obstructions, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 4 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

11. Claim 8 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 24 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim a head unit and AM/FM tuner, claim 24 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim.

12. Claim 9 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the low noise amplifier, claim 23 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim. The

instant claim also requires the satellite signal to be SDARS. Official Notice is taken that satellite audio is very popular. Therefore it would have been obvious to one of ordinary skill to modify claim 24 to receive SDARS signals in order to allow users to receive this popular band.

13. Claim 10 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the structure being one of an auto, RV, house, building, train and plane, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 6 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

14. Claim 11 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the structure being the roof of an automobile, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 5 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to



equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

15. Claim 12 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, the instant claim differs in being attached to the fender rather than the roof. It would have been obvious to one of ordinary skill in the art to modify claim 5 to mount the antenna on the fender if the vehicle were very high and the mounted antenna might be in danger of being dislodged in a low parking garage. The instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 5 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

16. Claims 13 and 18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the satellite antenna be mounted uppermost, the instant claim differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 5 in order to actually use the arrangement. As to the use of AM/FM note that these are very

popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

17. Claim 14 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 23 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim. The instant claim also requires the satellite be mounted lower than the terrestrial. It would have been obvious to one of ordinary skill in the art that mounting the antenna as low as possible would reduce aerodynamic drag on the assembly.

18. Claims 15 and 20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 38 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim retractable antennas, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi

band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

19. Claims 16 and 21 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 39 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim antennas retracting to within the structure, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

20. Claims 17 and 22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 40 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim antennas retracting to the surface of the structure, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

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21. Claim 19 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claim does not add any restriction on relative mounting of the satellite antenna. Claim 23 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim. The instant claim also requires the satellite be mounted lower than the terrestrial. It would have been obvious to one of ordinary skill in the art that mounting the antenna as low as possible would reduce aerodynamic drag on the assembly.

22. Claim 23 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 19 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they claim the same method steps, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

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23. Claims 24 and 27, (*Note the rejections of claims 26 and 27 under 112 above*) are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 20 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they claim the same 20-degree angle over obstructions, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands. Regarding claim 27, note that the claim would address any obstruction, including an auto fender.

24. Claim 25 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 22 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while the claim the same variety of mounting structures, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

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25. Claim 26 (*Note the rejections of claims 26 and 27 under 112 above*) is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 21 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while the claim the same roof mounting, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands.

***Claim Rejections - 35 USC § 103***

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

28. Claims 1,11,12,14-16,19-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland (CA 2305860) in view of McGowan (WO 2001/33666).

Consider claim 1. Kielland teaches a combined satellite and terrestrial antenna system for a structure, comprising:

a terrestrial antenna including a multi band terrestrial antenna (*Kielland figures 1-6, item 9, described as an AM FM antenna on page 1, lines 8-12*) mounted on a mounting assembly (*Kielland shows a mounting base assembly as item 1 in figures 1-6 and describes it on page 1, lines 12-26*) including a low noise amplifier circuit (*Kielland shows the low noise amp as item 13 in figure 2, and describes it on page 2, lines 12-18*) and a bezel, wherein the bezel is adapted to contain the amplifier (*Note that the claimed bezel is shown in Kielland as the base mounting assembly housing which houses the Low noise amp as shown in figure 2, described on page 1, line 26 – page e 2, lines 6*).

a satellite antenna (*Kielland shows the satellite antenna as item 2 in figures 1-6 and on page 1, lines 26-32, notes that it could be a micro strip patch or quadrafilair helix, based on the desired shape of the base*) and

a satellite receiver (*Kielland shows the satellite receiver as item 8 in figures 1 and 2, described on page 2, lines 5-6*);

the mounting assembly connected to

the satellite receiver (*Kielland shows the satellite receiver as item 8 in figures 1 and 2, described on page 2, lines 5-6*) for reception of satellite and satellite

retransmitted signals (*As to the claimed "retransmitted" satellite signal, note that Kielland's satellite antenna would receive the satellite frequency signals wherever they were transmitted from, be it an orbiting satellite or a terrestrial repeater*) by

a satellite-terrestrial-retransmitted- satellite cable (*Kielland shows the satellite receiver as item 8 in figures 1 and 2, described on page 2, lines 5-6*). and

an AM/FM receiver (*Kielland shows the AM FM receiver as item 12 in figures 1 and 2, described on page 2, lines 8-11*) for reception of AM/FM terrestrial signals by

a terrestrial AM/FM cable (*Kielland shows the terrestrial signal cable as item 11 in figures 1 and 2, described on page 2, lines 8-11*).

While Kielland shows the terrestrial antenna, item 9, apparently going through the center of the satellite antenna item 2 (which would position the satellite antenna concentrically around the terrestrial antenna), Kielland lacks a clear teaching of the satellite antenna being concentrically mounted in respect to the terrestrial antenna. Note that Kielland teaches the satellite antenna being a quadrafilar helix antenna or patch antenna (*Kielland see page 1, lines 27-32*).

In a similar multi mode satellite and terrestrial antenna arrangement, McGowan teaches a satellite element being a quadrafilar helix or similar antenna concentrically mounted in relation to a terrestrial antenna (*McGowan teaches on page 7, lines 33- 37 that the satellite element is "positioned concentrically and externally to the terrestrial element, as shown in figure 4a, as item 410, which comprises elements 422,424,426 and 428. Note that the terrestrial antenna is shown as item 430, see also page 10, lines 13-20* )



McGowan teaches that a compact antenna arrangement is desirable because of limited mounting space and to reduce wind resistance when mounted on a moving vehicle and this constraint is fulfilled by the concentric arrangement (*McGowan teaches the desirability of the compact concentric arrangement on page 7, lines 8-16*).

Therefore it would have been obvious to one of ordinary skill in the art to modify Kielland to mount the satellite antenna concentrically in relation to the terrestrial antenna in order to reduce mount space and wind resistance as taught by McGowan.

As to claim 11, Kielland teaches the structure being mounted on an automobile (Kielland page 1, lines 3-7). Kielland lacks a teaching of the antenna being mounted on the roof.

McGowan teaches mounting an antenna unit on the roof of a truck train, or other transportation vehicle (*McGowan shows the vehicle roofline as item 414 in figure 4, described in page 10, lines 24-26, and page 7, lines 1-12*). It would have been obvious to one of ordinary skill in the art to modify Kielland to mount the antenna on the roof of the vehicle as taught by McGowan in order to ensure that it got the most uninterrupted view of the sky possible on the vehicle.

As to claim 12, Kielland teaches the structure being mounted on an automobile (Kielland page 1, lines 3-7). Kielland lacks a teaching of the antenna being mounted on the fender.

McGowan teaches mounting an antenna unit on the fender of a truck train, or other transportation vehicle (*McGowan teaches fender mounting on page 4, lines 27-28*). It would have been obvious to one of ordinary skill in the art to modify Kielland to

mount the antenna on the fender of the vehicle as taught by McGowan in order to ensure that it would not be knocked off of the roof in low clearance garages or car ports.

As to claim 14 note that Kielland teaches the satellite antenna (*Kielland figures 1-6, item 2*) is mounted in a position lower than the terrestrial antenna (*Kielland figures 1-6, item 9*).

As to claims 15 and 20 (*Note the rejection of claims 15 and 20 as duplicate claims above*) note that Kielland teaches the terrestrial antenna being retractable (*Kielland see 2, lines 7-12*).

As to claims 16 and 21, (*Note the rejection of claims 15 and 20 as duplicate claims above*) note that Kielland teaches the terrestrial antenna retracts to a location within the structure (*Kielland see 2, lines 7-12*).

As to claim 19, Kielland in view of McGowan as applied to claim 1, lack a teaching of the satellite antenna being mounted at any position on the terrestrial antenna. It is first noted that clearly the mounting position of the satellite antenna relative to the terrestrial antenna is not a part of the essential novelty of the instant application. Similarly, neither Kielland nor McGowan disclose any special positing of the antennas, other than McGowan's teaching that it should be positioned around the terrestrial, i.e. concentrically. In fact Kielland goes to great pains to affirm that specifics of the arrangement, including type of antenna, or the overall shape of the mounting assembly could vary greatly (*Kielland see page 1, lines 12-15, 20-25, 27-31*). Therefore it would have been obvious to one of ordinary skill in the art to modify the arrangement

of Kielland in view of McGowan to position the satellite antenna at any position on the terrestrial antenna, to accommodate any aerodynamic, or esthetic arrangement of parts.

Consider claim 23. Kielland teaches a method for mounting a combined satellite and terrestrial antenna system on a structure comprising the following steps:

mounting a terrestrial antenna on a mounting assembly (*Kielland figures 1-6, item 9, described as an AM FM antenna on page 1, lines 8-12. Kielland shows a mounting base assembly as item 1 in figures 1-6 and describes it on page 1, lines 12-26*);

mounting the satellite antenna with the terrestrial antenna (*Kielland shows the satellite antenna as item 2 in figures 1-6 and on page 1, lines 26-32, notes that it could be a micro strip patch or quadrafilar helix, based on the desired shape of the base*);

mounting the mounting assembly in a mounting hole on a structure (*Kielland teaches the assembly being mounted in a hole in the car body on page 1, lines 20-23*), the mounting assembly comprising a low noise amplifier circuit (*Kielland shows the low noise amp as item 13 in figure 2, and describes it on page 2, lines 12-18*) and a bezel, the bezel adapted to contain the low noise amplifier (*Note that the claimed bezel is shown in Kielland as the base mounting assembly housing which houses the Low noise amp as shown in figure 2, described on page 1, line 26 – page e 2, lines 6*).;

locating satellite receiver hardware in proximity to the combined satellite and terrestrial antenna system (*Kielland shows the satellite receiver as item 8 in figures 1 and 2, described on page 2, lines 5-6*); and

connecting the satellite antenna with a satellite-terrestrial-retransmitted- satellite cable for reception of satellite and satellite-retransmitted signals (*Kielland shows the satellite receiver as item 8 in figures 1 and 2, described on page 2, lines 5-6. As to the claimed "retransmitted" satellite signal, note that Kielland's satellite antenna would receive the satellite frequency signals wherever they were transmitted from, be it an orbiting satellite or a terrestrial repeater*);

connecting the terrestrial antenna with an AM/FM cable for reception of AM/FM terrestrial signals (*Kielland shows the AM FM receiver as item 12 in figures 1 and 2, described on page 2, lines 8-11. Kielland shows the terrestrial signal cable as item 11 in figures 1 and 2, described on page 2, lines 8-11*);

While Kielland shows the terrestrial antenna, item 9, apparently going through the center of the satellite antenna item 2 (which would position the satellite antenna concentrically around the terrestrial antenna), Kielland lacks a clear teaching of the satellite antenna being concentrically mounted in respect to the terrestrial antenna. Note that Kielland teaches the satellite antenna being a quadrafilar helix antenna or patch antenna (*Kielland see page 1, lines 27-32*).

In a similar multi mode satellite and terrestrial antenna arrangement, McGowan teaches a satellite element being a quadrafilar helix or similar antenna concentrically mounted in relation to a terrestrial antenna (*McGowan teaches on page 7, lines 33- 37 that the satellite element is "positioned concentrically and externally to the terrestrial element, as shown in figure 4a, as item 410, which comprises elements 422,424,426*

and 428. Note that the terrestrial antenna is shown as item 430, see also page 10, lines 13-20 )

McGowan teaches that a compact antenna arrangement is desirable because of limited mounting space and to reduce wind resistance when mounted on a moving vehicle and this constraint is fulfilled by the concentric arrangement (*McGowan teaches the desirability of the compact concentric arrangement on page 7, lines 8-16*).

Therefore it would have been obvious to one of ordinary skill in the art to modify Kielland to mount the satellite antenna concentrically in relation to the terrestrial antenna in order to reduce mount space and wind resistance as taught by McGowan.

29. Claims 2-6,9,10,25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland in view of McGowan and further in view of Routtenberg et al (US 2002/0049717).

Consider claim 2. Kielland in view of McGowan as applied to claim 1, lack a teaching of the satellite antenna being configured to receive SDARS (satellite digital audio radio service) signals.

Routtenberg teaches that satellite audio radio is a popular service providing numerous high quality commercial free channels with a large potential market (*Routtenberg see especially paragraph 14 and 15*). It would have been obvious to one of ordinary skill in the art to modify the satellite antenna of Kielland in view of McGowan to receive SDARS signals in order to provide high quality commercial free channels to a large potential market of users.

As to claim 3, Kielland teaches the satellite antenna comprises a quadrafililar helix antenna (*Kielland see page 1, lines 29-30*).

As to claim 4, Kielland teaches the satellite antenna comprises a patch antenna (*Kielland see page 1, lines 27-29*).

As to claim 5, note that the quadrafililar helix of Kielland in view of McGowan is composed of coupled helix would loops (*McGowan shows the coupled helix loops in figure 4a*)

As to claim 6, note that the quadrafililar helix of Kielland in view of McGowan is composed of coupled helix would loops (*McGowan shows the coupled helix loops in figure 4a*)

As to claim 9, note that in the arrangement of Kielland in view of McGowan modified in view of Routtenberg to be used with SDARS, the satellite a satellite low noise amplifier with a first input would be connected to a first end of a satellite output, and the output of the low noise amplifier would be a SDARS/SAT/TER cable

As to claim 10 Kielland in view of McGowan as applied to claim 1 above, teaches the antenna being mounted on a structure comprising an automobile (*Kielland see page 1, lines 3-5*).

Kielland lacks a teaching of the structure being selected from the group consisting of a train and an aircraft and a recreational vehicle,

McGowan teaches mounting a combined satellite and terrestrial antenna assembly on a train or other type of transportation (*McGowan see page 10, lines 25-26*). It would have been obvious to one of ordinary skill in the art to modify Kielland to

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mount it on other forms of transport such as trains as taught by McGowan in order to allow the assembly to be marketed to various types of transportation users. As to the limitations regarding RV's and airplanes, Official Notice is taken that these are also popular types of transportation. Therefore it would likewise have been obvious to one of ordinary skill in the art to modify Kielland to mount the assembly on RV's and airplanes in order to further extend the potential market for the assembly to other types of transportation.

Kielland also lacks a teaching of the structure being selected from the group consisting of a house and a building.

Routtenberg notes that satellite radio is a large potential market, which would include potential users of satellite and AM/FM radios in their homes (*Routtenberg see paragraphs 14, and 15*). Therefore it would have been obvious to one of ordinary skill in the art to modify Kielland to install the antenna on homes and buildings in order to reach the potential market of home users of satellite radio as taught by Routtenberg.

As to claim 25 Kielland in view of McGowan as applied to claim 23 above, teaches the antenna being mounted on a structure comprising an automobile (*Kielland see page 1, lines 3-5*).

Kielland lacks a teaching of the structure being selected from the group consisting of a train and an aircraft and a recreational vehicle,

McGowan teaches mounting a combined satellite and terrestrial antenna assembly on a train or other type of transportation (*McGowan see page 10, lines 25-26*). It would have been obvious to one of ordinary skill in the art to modify Kielland to

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mount it on other forms of transport such as trains as taught by McGowan in order to allow the assembly to be marketed to various types of transportation users. As to the limitations regarding RV's and airplanes, Official Notice is taken that these are also popular types of transportation. Therefore it would likewise have been obvious to one of ordinary skill in the art to modify Kielland to mount the assembly on RV's and airplanes in order to further extend the potential market for the assembly to other types of transportation.

Kielland also lacks a teaching of the structure being selected from the group consisting of a house and a building.

Routtenberg notes that satellite radio is a large potential market, which would include potential users of satellite and AM/FM radios in their homes (*Routtennberg see paragraphs 14, and 15*). Therefore it would have been obvious to one of ordinary skill in the art to modify Kielland to install the antenna on homes and buildings in order to reach the potential market of home users of satellite radio as taught by Routtenberg.

30. Claims 7, 24, 26, 27 are is rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland in view of McGowan and further in view of King (US 6,538,612).

Consider claim 7. Kielland in view of McGowan as applied to claim 1, lack a teaching of the antenna assembly being mounted at a common location on the structure, such that the angle formed by the difference in height between the top of an obstruction and the height of the satellite antenna, and the distance from the obstruction



and the combined concentrically mounted satellite and multi-band terrestrial antenna is less than 20 degrees.

King teaches that it is important when mounting satellite antennas that they are free of line of sight obstructions. (*King in figures 1, and 2 and on column 4, lines 21-30, teaches that objects and components must be located below an angle drawn from the center of device up 20 degrees from the top of the roof*). Therefore it would have been obvious to one of ordinary skill in the art to mount the antenna assembly of Kielland in view of McGowan such that an angle formed from the antenna and the top of an obstruction is less than 20 degrees as taught by King in order to reduce the effect of signal interference from any of the obstructions.

Consider claim 24. Kielland in view of McGowan as applied to claim 23, lack a teaching of the antenna assembly being mounted at a common location on the structure, such that the angle formed by the difference in height between the top of an obstruction and the height of the satellite antenna, and the distance from the obstruction and the combined concentrically mounted satellite and multi-band terrestrial antenna is less than 20 degrees.

King teaches that it is important when mounting satellite antennas that they are free of line of sight obstructions. (*King in figures 1, and 2 and on column 4, lines 21-30, teaches that objects and components must be located below an angle drawn from the center of device up 20 degrees from the top of the roof*). Therefore it would have been obvious to one of ordinary skill in the art to mount the antenna assembly of Kielland in view of McGowan such that an angle formed from the antenna and the top of an

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obstruction is less than 20 degrees as taught by King in order to reduce the effect of signal interference from any of the obstructions.

As to claim 26 and 27, *(Note the rejections of claims 26 and 27 under 112 above)* note that in Kielland in view of McGowan as modified by King above, the obstruction would be any signal reflective obstruction, including of course the roof and fender, depending on the placement of the antenna.

31. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland in view of McGowan and further in view of Thompson (US 6,698,634).

Consider claim 8. Kielland in view of McGowan as applied to claim 1, lack a teaching of the AM/FM receiver comprising a head unit; and an AM/FM tuner. (as shown in instant figures 5a,b, and 8 the claimed head unit is the satellite controller). Thompson teaches a combined head unit which combines the AM FM and satellite receivers (*Thompson figure 1, item 110, described on column 9, line 56 – column 10, lines 2*). It would have been obvious to one of ordinary skill in the art to replace the separate receivers with the combined head unit as taught by Thompson in order to simplify installation and use as well as reduce the amount of space needed.

32. Claims 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland in view of McGowan and further in view of Terk et al (US 2003/0107520).

*Note the rejection of claims 13 and 18 as duplicates above.*

Consider claim 13. Kielland in view of McGowan as applied to claim 1 above, lack a teaching of the satellite antenna is mounted on the upper-most portion of the terrestrial antenna.

In a similar satellite and terrestrial antenna arrangement Terk teaches mounting a satellite antenna on the upper most portion of a terrestrial antenna (*Terk's satellite antenna is shown as item 74 in figure 4, and described as being mounted at the upper portion of the terrestrial antenna in paragraph 48*). It would have been obvious to one of ordinary skill in the art to modify Kielland in view of McGowan to mount the antenna at the uppermost portion as taught by Terk in order to ensure that the satellite antenna had the best reception placement possible.

33. Claims 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland in view of McGowan and further in view of Shimizu (US 6,714,164).

Consider claims 17 and 22. (*Note the rejection of claims 15 and 20 as duplicate claims above*) Kielland as applied to claim 1, teaches the use of a retractable antenna. Kielland lacks a teaching of the antenna retracting to a location on the surface of the structure.

Shimizu teaches that the roof is the best place to mount a satellite antenna and it cannot be retracted into the compartment (*Shimizu see column 1, lines 38-65*). Therefore it would have been obvious to one of ordinary skill in the art to modify Kielland's retractable antenna to only retract to the surface in order to allow the device

to be mounted on the roof where the best signal reception is, without having to provide a compartment for the retracted antenna.

### ***Conclusion***

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J Sobutka whose telephone number is 571-272-7887. The examiner can normally be reached Monday through Friday from 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4711.

35. The central fax phone number for the Office is 571-273-8300.

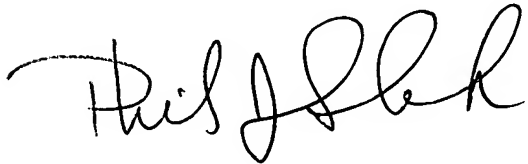
Most facsimile-transmitted patent application related correspondence is required to be sent to the Central FAX Number.

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36. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



3/17/06

**PHILIP J. SOBUTKA**  
**PATENT EXAMINER**

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